

What is claimed is:

- 1 1. A transmitter, comprising:
2 a first variable gain amplifier having a first AGC loop to control a gain thereof;
3 a second variable gain amplifier having a second AGC loop to control a gain
4 thereof, said second variable gain amplifier being located within a common transmitter
5 chain as said first variable gain amplifier; and
6 a controller to manage said first AGC loop and said second AGC loop to
7 achieve a desired result at an output of said transmitter.
- 1 2. The transmitter of claim 1, comprising:
2 at least one other variable gain amplifier within the common transmitter chain,
3 said at least one other variable gain amplifier having a corresponding AGC loop,
4 wherein said controller manages said first AGC loop, said second AGC loop, and said
5 AGC loop of said at least one other variable gain amplifier to achieve said desired
6 result.
- 1 3. The transmitter of claim 1, comprising:
2 a CW source having a controllable output level; and
3 an ALC loop to control said output level of said CW source, wherein said
4 controller manages said ALC loop to achieve said desired result.
- 1 4. The transmitter of claim 1, wherein:
2 at least one of said first AGC loop and said second AGC loop uses a pilot signal
3 to adjust a gain of a corresponding variable gain amplifier, said pilot signal being
4 different from a communication signal propagating through the transmitter chain.
- 1 5. The transmitter of claim 1, wherein:
2 at least one of said first AGC loop and said second AGC loop is coupled to a
3 duplicate circuit that mimics the operation of a corresponding variable gain amplifier in
4 the transmitter chain.

1 6. The transmitter of claim 1, wherein:

2 said controller deactivates said first AGC loop during a period when no gain
3 adjustment of said first variable gain amplifier is desired, to reduce power consumption
4 within the transmitter.

1 7. The transmitter of claim 6, wherein:

2 said controller deactivates said second AGC loop during a period when no gain
3 adjustment of said second variable gain amplifier is desired, to reduce power
4 consumption within the transmitter.

1 8. The transmitter of claim 1, wherein:

2 said first AGC loop is coupled to a duplicate of said first variable gain
3 amplifier, wherein said controller deactivates said duplicate of said first variable gain
4 amplifier during a period when no gain adjustment of said first variable gain amplifier
5 is desired, to reduce power consumption within the transmitter.

1 9. The transmitter of claim 1, wherein:

2 said first AGC loop is associated with a pilot generator to generate a pilot signal
3 to be applied to said first variable gain amplifier, wherein said controller deactivates
4 said pilot generator during a period when no gain adjustment of said first variable gain
5 amplifier is desired, to reduce power consumption within the transmitter.

1 10. The transmitter of claim 1, wherein:

2 said controller occasionally activates said first AGC loop, when deactivated, to
3 compensate for drift within the transmitter circuitry.

1 11. A method for generating a transmit signal, comprising:

2 determining a desired transmit power result for a transmitter;

3 determining gain values for multiple variable gain amplifiers in the transmitter
4 to achieve the desired transmit power result; and
5 delivering said gain values to AGC loops associated with said multiple variable
6 gain amplifiers, said AGC loops to adjust the gains of said multiple variable gain
7 amplifiers in accordance with said gain values.

1 12. The method of claim 11, wherein:
2 determining a desired transmit power result includes determining a desired
3 transmit power level.

1 13. The method of claim 11, wherein:
2 determining a desired transmit power result includes determining a desired
3 change in transmit power level.

1 14. The method of claim 11, wherein:
2 determining desired gains includes determining gains that enhance a dynamic
3 range of said transmitter.

1 15. The method of claim 11, comprising:
2 deactivating circuitry associated with an AGC loop in the transmitter during an
3 interval when the transmitter is active and no gain adjustment is desired for a
4 corresponding variable gain amplifier.

1 16. The method of claim 11, wherein:
2 said transmitter includes a first variable gain amplifier and a duplicate of said
3 first variable gain amplifier, wherein said method further comprises deactivating said
4 duplicate of said first variable gain amplifier during an interval when the transmitter is
5 active and no gain adjustment is desired for the first variable gain amplifier.

1 17. The method of claim 11, comprising:
2 determining an output level for a CW source in the transmitter to achieve the
3 desired transmit power result; and
4 delivering said output level to an ALC loop associated with the CW source, said
5 ALC loop to adjust the output level of the CW source accordingly.

1 18. A transmitter comprising:
2 a CW source to generate a carrier signal;
3 a modulator to modulate said carrier signal based on input data;
4 a first variable gain amplifier to amplify a signal previously processed by said
5 modulator, said first variable gain amplifier having a first AGC loop to control a gain
6 thereof;
7 a second variable gain amplifier to amplify a signal previously processed by
8 said first variable gain amplifier, said second variable gain amplifier having a second
9 AGC loop to control a gain thereof; and
10 a controller to determine gains for said first and second variable gain amplifiers
11 to achieve a desired result at an output of the transmitter, said controller to deliver said
12 gains to said first and second AGC loops, respectively.

1 19. The transmitter of claim 18, wherein:
2 said CW source has an ALC loop associated with it to control an output level
3 thereof, wherein said controller determines an output level for the CW source to
4 achieve the desired result at the output of the transmitter, said controller to deliver said
5 output level to the ALC loop of the CW source.

1 20. The transmitter of claim 18, comprising:
2 a frequency translation device between the first and second variable gain
3 amplifiers to translate a frequency of a signal propagating from the first variable gain
4 amplifier to the second variable gain amplifier.

1 21. The transmitter of claim 18, comprising:
2 at least one other variable gain amplifier having a corresponding AGC loop,
3 wherein said controller determines gains for said first AGC loop, said second AGC
4 loop, and said AGC loop of said at least one other variable gain amplifier to achieve
5 said desired result.

1 22. The transmitter of claim 18, wherein:
2 said first AGC loop uses a pilot signal to adjust the gain of the first variable gain
3 amplifier and said second AGC loop uses a duplicate circuit to adjust the gain of the
4 second variable gain amplifier.

1 23. The transmitter of claim 18, wherein:
2 said first AGC loop and said second AGC loop use duplicate circuits to adjust
3 the gains of corresponding variable gain amplifiers.